REMARKS

An Extension of Time Request accompanies this Response making the Response due 1211/02. In this First Office Action, the Examiner rejected claims 1-10, 13-15, and 17-18. The Examiner allowed claims 16 and 20 and indicated allowance to claims 11, 12 and 19. Based upon the amendment set forth above and for the reasons in the following, the Applicants respectfully request the Examiner to reconsider the unallowed claims and to allow them. Claims 15 and 17 have been cancelled.

With respect to "objected to" claims 11, 12 and 19, these claims have been amended: claim 1 has been put into claim 11; claim 18 has been put into claim 19. These amendments put claims 11, 12 and 19 in condition for allowance. Claims 18 and 19 have been amended to recite "saturated" rather than "saturation". Such allowance is respectfully requested.

With respect to remaining claims 1-10, 13-14 and 18, the Examiner rejects these claims under 34 U.S.C. §103 (a) as being unpatentable over Earnest (reference M) in view of Wilson. Applicants acknowledge the teaching of Earnest and fully discusses it in the Background of the Invention. With respect to Wilson, the Rejection states: "Wilson teaches in the same field of endeavor mounting a magnetic flaw detector on a carriage for forcing the detector against the rail head for the purpose of maintaining the detector parallel with the rail at all times. This protects the detector from damage and inherently controls lift-off." The undersigned respectfully disagrees with the above statement concerning the teachings of Wilson. As shown in Figure 1, the housing 23 carrying the induction coils 22 is held "a constant distance above the rail surface by means of a carriage." (column 2, lines 6-8). Claim 1 specifically recites "protective material on the low frequency eddy current probe." Claim 1 also specifically recites that "the protective material abutting the rail head when the transponder moves on the railroad track thereby protecting the low frequency eddy current probe from damage." Claim 18 recites "applying a force to the low frequency eddy current probe against the rail head as the transponder moves on the rail." There is no such teaching in Wilson or the earlier Earnest reference. The wheel embodiment shown in Figures 14 and 16 clearly shows the protective material 550 abutting the rail surface. The preferred embodiment of this protective material is a TEFLON material (page 13, lines 16-17). It is maintained that when Wilson is correctly interpreted, these claims are patentably distinct and such allowance is respectfully requested.

Should you have any questions regarding the above, please feel free to give the below-listed attorney a call. If additional fees are required, please debit our Deposit Account No. 04-1414.

Respectfully submitted,

DORR, CARSON, SLOAN & BIRNEY, P.C.

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By: Robert C. Dorr

Robert C. Dorr, #27,782
3010 East 6th Avenue
Denver, Colorado 80206
(303) 333-3010
email: bobdorr@patnet.com

Marked-Up Version of the Amendments to Claims 11, 18 and 19

11. (Amended) [The system of claim 1 further comprising:] A system for detecting transverse cracks in rail head on railway track comprising:

a transporter on the railway track, said transporter moving the system along the railway track,

a toroidal-shaped DC magnet mounted to the transporter with its opposing pole ends inwardly directed towards each other and aligned over the rail head,

an inductive coupling between each of the poles and the rail head to magnetically saturate the rail head, the inductive coupling slideably engaging the rail head,

at least one low frequency eddy current probe, centrally located between the poles of the toroidal-shaped DC magnet, for sensing said transverse cracks in the rail head,

protective material on the low frequency eddy current probe,

a separate sensor near said low frequency eddy current probe for sensing non-relevant indications in the rail head, said separate sensor held a predetermined distance above said rail head,

said system rejecting a sensed transverse crack when the separate sensor senses a non-relevant indication[.],

a carriage mounted to the transporter forcing said low frequency eddy current probe against said rail head, the protective material abutting the rail head when the transporter moves on the railway track thereby protecting the low frequency eddy current probe from damage.

18. (Amended) A method for detecting transverse cracks in rail head of a rail comprising:

moving a transporter on the rail,

generating a [saturation] saturated magnetic field into and across the rail head with a DC saturation magnet mounted to the transporter a predetermined distance above the rail head while the transporter is moving, the saturation magnet having a toroidal-shape with opposing pole ends inwardly directed towards each other over the rail head,

inductively coupling the opposing pole ends of the DC saturation magnet with the rail head,

detecting transverse cracks in the rail head with a low frequency eddy current probe mounted centrally between the opposing pole ends of the DC saturation magnetic and over the rail head,

applying a force to the low frequency eddy current probe against the rail head as the transporter moves on the rail,

controlling lift-off of the low frequency eddy current probe from the rail head as the transporter moves on the rail.

19. (Amended) [The method of claim 18 further comprising:]

A method for detecting transverse cracks in rail head of a rail comprising:

moving a transporter on the rail,

generating a saturated magnetic field into and across the rail head with a DC saturation magnet mounted to the transporter a predetermined distance above the rail head while the transporter is moving, the saturation magnet having a toroidal-shape with opposing pole ends inwardly directed towards each other over the rail head,

inductively coupling the opposing pole ends of the DC saturation magnet with the rail head,

detecting transverse cracks in the rail head with a low frequency eddy current probe mounted centrally between the opposing pole ends of the DC saturation magnetic and over the rail head,

applying a force to the low frequency eddy current probe against the rail head as the transporter moves on the rail,

controlling lift-off of the low frequency eddy current probe from the rail head as the transporter moves on the rail,

sensing non-relevant indications in the rail head with at least one separate sensor,

rejecting a detected transverse crack by the low frequency eddy current probe when it corresponds to a sensed non-relevant indication by the at least one separate sensor.